AIWA®

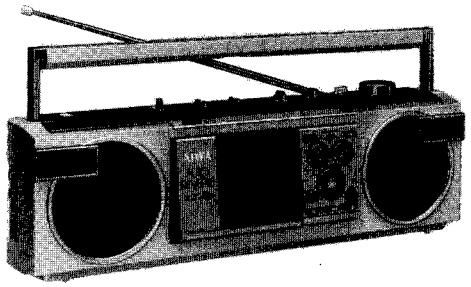
S/M Code No. 84-023 W
DATE OF ISSUE 9/1984

SERVICE MANUAL

MULTI BAND STEREO RADIO CASSETTE RECORDER

MODEL NO.

CS-R10

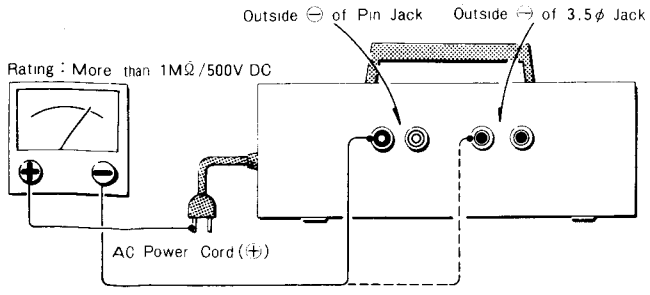


TYPE. SHS, SHR, SHB, SHJS, SHJR, SHJB, MCS, MCR, MCB, MUS, MUB, LES, LER, LEB, LKS, LKB, SGS, SGB, LZS, LZR, LZB, SFJS

Follow the instructions carefully, which will allow the user to optimise the products' performance and give many years of serivce.

1. **No scratch and melting shall be made to covered lead-wires of an a.c. primary circuit including mains leads.**
2. **No illegibility shall be given to the specification plate, the caution labels, the fuse labels and others.**
3. **When, on pattern sides of circuit boards, additional repair-parts have been made up, the parts shall be firmly glued to circuit boards or other components, unless the parts can be attached firmly.**
4. **The following matters shall be maintained as they are, when repairing.**
   1) Soldering of lead-wire ends
      * Care should be taken of the space distance in an a.c. primary circuit as well as soldering.
   2) Wiring and holding of lead-wires with wire-clips and binders
   3) Materials of lead-wires
      * e.g.; For UL models, lead-wires to be used shall be approved or accepted by the UL.
   4) Location of all kinds of insulators
   5) Setting of voltage selector switch
      * Set the Voltage Selector Switch to 240V, 220V, or 120V, According to your Local Voltage.
5. **After repaired, the insulation resistance or leakage current shall be measured with 500 ± 5V D.C and shall be not less than 1MΩ.**

Measuring Point



6. **General instructions for mechanism repair**
   1) Lubricants been stained the surfaces of transmitting portion of the belts, idlers, capstan and pinch roller shall be removed, because slippery and faulty tape travel shall be caused.
   2) When oiling, only one or two drops shall be applied so as not to run over and be dispersed. Note should be taken of the metal fitting for the capstan and rotating portions of the idlers and pinch roller, especially.
   3) E-rings and poly slider washers shall be replaced with new ones, if once those have been removed. – No re-utilization due to unreliability.
   4) Regular spare-parts shall always be used for repair, because using irregular parts and tampering with the products shall cause deterioration, mulfunction and damage.

SPECIFICATIONS

Type	Stereo multiband radio cassette recorder
Power source	Batteries, DC 9V (UM-2 x 6) Household AC power (thru AC adaptor)
Output	8 W maximum (4W + 4W) **FTC Rule** 1.8 watts per channel, Min. RMS at 2.6 ohms, from 70 Hz to 16 kHz, with no more than 10% Total Harmonic Distortion
Speakers	Woofer 100 mm cone type × 2 Tweeter 20 mm ceramic type × 2

Tape Recorder Section

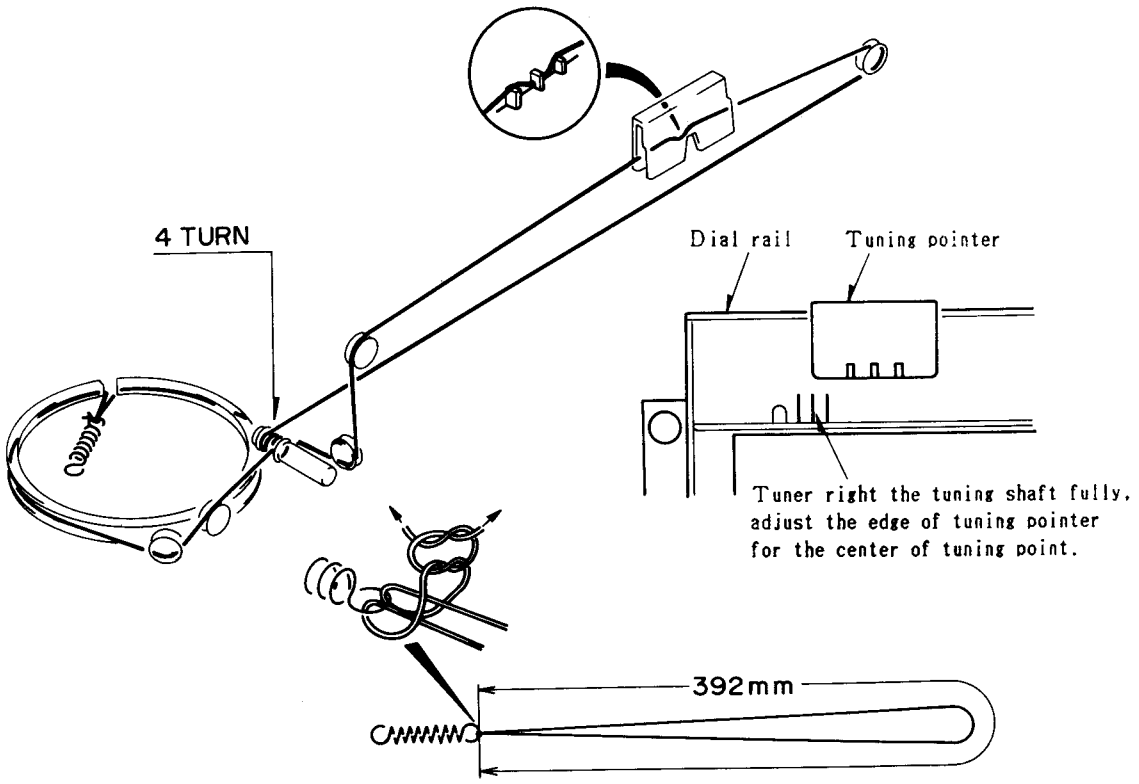
Built-in microphone	Electret condenser microphone
Tape speed	4.8 cm/sec (1-7/8 ips)
Recording system	AC bias
Erasing system	AC erase
Recording time	90 minutes (C-90 cassette, both directions)
Frequency response	Normal tape: 40—12,500 Hz Metal tape: 40—16,000 Hz
Signal-to-noise ratio	50 dB (Normal tape)

Radio Section

Frequency ranges	**CS-R10MU,MC** FM: 87.5—108 MHz MW: 530—1,605 kHz **CS-R10SH,SG,SF** FM:87.5—108 MHz MW:530—1,605 kHz SW_1:2.3—7.0 MHz SW_2:7.0—22 MHz **CS-R10LE,LK,LZ** FM: 88—108 MHz SW: 5.9—18 MHz MW: 530—1,605 kHz LW: 150—285 kHz
Antennas	**CS-R10MUC** Whip antenna for FM Ferrite bar antenna for MW **CS-R10SH,SG** Whip antenna for FM and SW_2 Ferrite bar antenna for MW and SW_1 **CS-R10LE,LK,LZ** Whip antenna for FM and SW Ferrite bar antenna for MW and LW
Dimensions (W×H×D)	436 x 192 x 122.5 mm
Weight	2.5kg
Accessories	AC adaptor 1 (Not applicable for Australia)

- Design and specifications are subject to change without notice.

DIAL CORD STRINGING


4 TURN
Dial rail
Tuning pointer
Tuner right the tuning shaft fully, adjust the edge of tuning pointer for the center of tuning point.
392mm

ELECTRICAL MAIN PART LIST (CS-R10 SHS,SHR,SHB,SHJS,SHJR,SHJB,LES,LER, LEB,LKS,LKB,SGS,SGB,LZS,LZR,LZB,SFJS)

● ★-mark means less required items and availabilities may be limited.

Symbol No.	Part No.	Description
≪ I C ≫		
ϟ	81-532-660	I C, L C 6 5 0 2 B-6 7 7
	87-020-243	I C, M 5 1 1 6 1 P
	87-027-867	I C, T A 7 3 4 3 P
	87-027-913	I C, T A 7 6 4 0 A P
	87-027-912	I C, μ P C 1 2 2 5 C
	87-020-122	I C, μ P C 1 2 7 8 H
≪ T R A N S I S T O R ≫		
	89-110-154	T R A N S I S T O R, 2 S A 1 0 1 5 Y
	89-110-155	T R A N S I S T O R, 2 S A 1 0 1 5 G R
	89-206-412	T R A N S I S T O R, 2 S B 6 4 1 R
	89-112-965	T R A N S I S T O R, 2 S C 1 2 9 6 G R
	89-313-833	T R A N S I S T O R, 2 S C 1 3 8 3 R S
	89-318-154	T R A N S I S T O R, 2 S C 1 8 1 5 Y
	89-318-155	T R A N S I S T O R, 2 S C 1 8 1 5 G R
	89-320-011	T R A N S I S T O R, 2 S C 2 0 0 1 L, K
	89-332-665	T R A N S I S T O R, 2 S C 3 2 6 6 G R
	89-332-666	T R A N S I S T O R, 2 S C 3 2 6 6 B L
	89-406-362	T R A N S I S T O R, 2 S D 6 3 6 R
	89-502-414	F E T, 2 S K 2 4 1 Y
≪ T U N E R C I R C U I T B O A R D S E C T I O N ≫		
P C B-A	81-511-644	T U N E R C I R C U I T B O A R D
D1	87-017-004	D I O D E, S D-1 1 7
L1	87-006-062	F M R F C O I L
L2	87-007-132	F M O S C C O I L (H, E, K, G, Z only)
L2	87-007-138	F M O S C C O I L (F only)
L5,12	87-005-151	C H O K E C O I L, 2.2 μ H
L6	87-006-063	S W 2 A N T E N N A C O I L (H, G, F only)
L6	87-006-064	S W A N T E N N A C O I L (E, K, Z only)
L7,8	81-532-679	M W / S W 1 B A R A N T E N N A C O I L (H, G, F only)
L7,8	81-532-680	L W / M W B A R A N T E N N A C O I L (E, K, Z only)
L9	87-007-125	S W 2 O S C C O I L (H, G, F only)
L9	87-007-127	S W O S C C O I L (E, K, Z only)
L10	87-007-124	S W 1 O S C C O I L (H, G, F only)
L10	87-007-123	M W O S C C O I L (E, K, Z only)
L11	87-007-123	M W O S C C O I L (H, G, F only)
L11	87-007-126	L W O S C C O I L (E, K, Z only)
L13	87-003-078	C H O K E C O I L, 0.2 2 μ H
VC1,2,3,4 TC1,2,3,4	87-011-138	P V C, 2 0 P
TC6	87-011-148	T R I M M E R, 3 0 p F
TC7	87-011-147	T R I M M E R, 1 1 p F
TC8	87-011-147	T R I M M E R, 1 1 p F (H, G, F only)
TC8	87-011-148	T R I M M E R, 3 0 p F (E, K, Z only)
CF1,2	87-008-261	C E R A M I C F I L T E R, S F E 1 0.7 M A 5-A (H, G, F only)
CF1,2	87-008-264	C E R A M I C F I L T E R, S F E 1 0.7 M S 2-A (E, K, Z only)
CFT1	87-008-265	C E R A M I C F I L T E R T R A N S F O R M E R, C F T-4 6 8
IFT1	87-008-258	F M I F T P S
IFT2	87-008-259	F M I F T (Q U A D) P S
IFT3	87-008-256	A M I F T (D E T) P S
BPF1	87-030-082	B A N D P A S S F I L T E R

Symbol No.	Part No.	Description
SFR1	87-021-777	S F R 4.7 k Ω-B
PIN1	★87-032-965	P I N, 6 P
S13	81-031-785	R O T A R Y S W I T C H (B A N D S E L E C T O R)
		＜ Capacitors ＞
C1,3,4,10, 11,12,13, 14,20,21, 26,29,43, 49	87-018-047	0.0 1 μ F 16 V C E R A M I C
C2	87-018-016	2 2 p F C E R A M I C
C7	87-018-055	1 2 p F C E R A M I C
C16,27,32, 39,40	87-015-695	1 μ F 50 V E L E C T R O L Y T I C
C17	87-012-105	0.0 2 2 μ F C E R A M I C
C24	87-018-036	2 2 0 p F C E R A M I C
C33	87-015-697	3.3 μ F 50 V E L E C T R O L Y T I C
C35	87-014-057	1 0 0 0 p F P P
C48	87-018-010	1 2 p F C E R A M I C (H, G, F only)
C48	87-018-014	1 8 p F C E R A M I C (E, K, Z only)
C51	87-018-047	0.0 1 μ F 16 V C E R A M I C (E, K, Z only)
C52	87-018-008	8.2 p F C E R A M I C (H, G, F only)
C52	87-018-018	2 7 p F C E R A M I C (E, K, Z only)
C53	87-018-006	5.6 p F C E R A M I C (H, G, F only)
C53	87-018-009	1 0 p F C E R A M I C (E, K, Z only)
C55	87-018-082	1 5 p F C E R A M I C (H, G, F only)
C55	87-018-091	5 6 p F C E R A M I C (E, K, Z only)
C58	87-014-045	3 3 0 p F P P (H, G, F only)
C58	87-018-032	1 0 0 p F C E R A M I C (E, K, Z only)
C59	87-018-094	1 5 0 0 p F C E R A M I C (H, G, F only)
C59	87-014-045	3 3 0 p F P P (E, K, Z only)
C60	87-018-095	0.0 1 μ F C E R A M I C
C64	87-018-039	3 9 0 p F C E R A M I C (H, G, F only)
C64	87-018-034	1 5 0 p F C E R A M I C (E, K, Z only)
C72	87-018-083	1 8 p F C E R A M I C (E, K, Z only)
≪ M A I N C I R C U I T B O A R D S E C T I O N ≫		
P C B-B	*	M A I N C I R C U I T B O A R D
D1,2,3,4,5, 6,9,10,12	87-027-134	D I O D E, 1 S 2 4 7 3
D8	87-027-399	Z E N E R D I O D E, H Z 7 A 3 L
L1,2	★81-532-637	T R A P C O I L, 6 1 K
L3	87-005-151	C O I L, 2.2 μ H
VR1	81-532-614	V O L U M E, 5 0 k Ω-B (V O L U M E)
VR2	81-532-613	V O L U M E, 5 0 k Ω-A (T O N E)
CP1	81-532-646	B I A S, O S C B L O C K

Symbol No.	Part No.	Description
J1	87-049-413	P I N J A C K, (L I N E I N-L)
J2	87-049-417	P I N J A C K, (L I N E I N-R)
J4	87-049-333	J A C K, 3.5 ø W / S W I T C H (P H O N E S)
J5	87-049-433	D C J A C K
S1	81-532-664	L E V E R S W I T C H (F U N C T I O N)
S2,3	87-031-833	P U S H S W I T C H (F M M O D E / (O S C), T A P E S E L E C T O R)
P IN8	★87-032-964	P I N, 4 P
P IN9	★87-032-966	P I N, 6 P
P IN10	★87-049-321	P I N, 6 P
P IN11,12	★87-049-317	P I N, 2 P
P IN13	★87-049-319	P I N, 4 P
CON1	★81-532-665	F L A T C A B L E, 6 P
		＜ Resistor ＞
R97	87-025-313	4.7 Ω N O N F L A M M A B L E
		＜ Capacitors ＞
C3,4,88	87-010-071	1 μ F 50 V E L E C T R O L Y T I C
C5,6,82	87-010-078	4 7 μ F 6.3 V E L E C T R O L Y T I C
C7,8,19,20	87-010-072	2.2 μ F 50 V E L E C T R O L Y T I C
C9,10,27, 28	87-018-043	8 2 0 p F C E R A M I C
C11,12	87-018-045	0.0 0 2 μ F C E R A M I C
C13,14,60	87-015-681	1 0 p F 16 V E L E C T R O L Y T I C
C15	87-010-113	1 0 0 0 μ F 6.3 V E L E C T R O L Y T I C
C16,74,76	87-018-047	0.0 1 μ F 16 V C E R A M I C
C21,22	87-010-079	1 0 0 μ F 6.3 V E L E C T R O L Y T I C
C23,24,29, 30	87-010-070	0.4 7 μ F 50 V E L E C T R O L Y T I C
C26	87-018-044	2 2 0 0 p F C E R A M I C
C31,32,59	87-018-036	2 2 0 p F C E R A M I C
C36,37,81	87-010-076	2 2 μ F 6.3 V E L E C T R O L Y T I C
C38,39	87-018-040	4 7 0 p F C E R A M I C
C41	87-015-684	4 7 μ 16 V E L E C T R O L Y T I C
C57,58	87-010-080	2.2 μ F 10 V T A N T A L U M
C61	87-015-695	1 μ F 50 V E L E C T R O L Y T I C
C75	87-015-975	2 2 0 μ F 6.3 V E L E C T R O L Y T I C
C77	87-010-221	4 7 0 μ F 10 V E L E C T R O L Y T I C
C79	87-015-892	1 0 0 0 μ F 16 V E L E C T R O L Y T I C
C83,84	87-018-046	4 7 0 0 p F C E R A M I C
≪ L O G I C C I R C U I T B O A R D S E C T I O N ≫		
P C B-C	*	L O G I C C I R C U I T B O A R D
D401,402, 403,404, 405,407, 408,410, 411,412, 414	87-027-097	D I O D E, 1 S 2 4 7 3
D406	87-020-012	D I O D E, O A 9 0 A R
D409	87-027-399	Z E N E R D I O D E, H Z 7 A 3 L
L401	87-007-108	C O I L, O S C
L402	87-005-151	C O I L, 2.2 μ H
L403	87-005-153	C O I L, 4 7 μ H
P IN4	87-049-323	P I N, 1 0 P
P IN5	87-049-434	P I N, 9 P
CON9	81-532-677	C O N N E C T O R A s s ' y, 7 P

Symbol No.
R480,481,
482,483,
484,485,
486,487,
488,489,
490,491
C402,403,
410,414
C406
C407
C408,409
C408,409
C411
≪ S W I B
P C B-D
D301
L E D302,
304,
306
L E D305
S301,302,
303,306,
307,308,
309
S310
S304/ L E D301
S305/ L E D304
C O N 6 ★
C O N 7 ★
≪ J A C B
P C B-E
J3
E C M
C O N 8 ★
≪ A U T B
P C B-F
C P 4 0 1
≪ R E L B
P C B-G
C O N 1 0 ★
C O N 1 1 ★
≪ G O V B
M401

IN-L)
IN-R)
TCH

UNCTION)
MODE/
CTOR)

LAMMABLE

>
TROLYTIC
TROLYTIC
TROLYTIC
MIC

MIC
TROLYTIC
TROLYTIC
MIC
TROLYTIC
TROLYTIC

MIC
MIC
TROLYTIC
MIC
TROLYTIC
ALUM
TROLYTIC
TROLYTIC
TROLYTIC
TROLYTIC
MIC

N ≫
OARD

7A3L

7P

Symbol No.	Part No.	Description
		＜Resistor＞
R480,481, 482,483, 484,485, 486,487, 488,489, 490,491	81-532-663	100kΩ BLOCK RESISTOR
		＜Capacitors＞
C402,403, 410,414	87-018-047	0.01μF 16V CERAMIC
C406	87-018-040	470pF CERAMIC
C407	87-018-046	4700pF CERAMIC
C408,409	87-018-047	0.01μF 16V CERAMIC (H, G, F only)
C408,409	87-010-071	1μF 50V ELECTROLYTIC (E, K, Z only)
C411	87-010-221	470pF 10V ELECTROLYTIC
		≪SWITCH CIRCUIT BOARD SECTION≫
PCB-D	*	SWITCH CIRCUIT BOARD
D301	87-027-134	DIODE, 1S2473
LED302, 304, 306	87-020-127	LED, GL-9PR24 (REC, REV REC, OPERATE/BATT)
LED305	87-020-239	LED, GL9HY24 (PAUSE)
S301,302, 303,306, 307,308, 309	82-674-628	TACT SWITCH (▶▶ F. FWD, ◀◀ F. FWD, PAUSE, REC, REV REC, REC MUTE, STOP)
S310	87-031-838	SLIDE SWITCH (REVERSE MODE)
S304/ LED301	81-532-638	PUSH SWITCH (▶ PLAY, ◀ REV PLAY)
S305/ LED304		
CON6	★81-532-626	CONNECTOR Ass'y, 12P
CON7	★81-532-678	CONNECTOR Ass'y, 8P
		≪JACK CIRCUIT BOARD SECTION≫
PCB-E	*	JACK CIRCUIT BOARD
J3	87-049-336	JACK (MIX MIC)
ECM	87-041-036	ELECTRIC CONDENSER MICROPHONE
CON8	★81-532-666	FLAT CABLE, 3P
		≪AUTO STOP CIRCUIT BOARD SECTION≫
PCB-F	*	AUTO STOP CIRCUIT BOARD
CP401	81-027-644	PHOTO SENSOR,NJL-5141EA
		≪RELAY CIRCUIT BOARD SECTION≫
PCB-G	*	RELAY CIRCUIT BOARD
CON10	★81-532-622	CONNECTOR Ass'y, 6P
CON11	★81-532-619	CONNECTOR Ass'y, 2P
		≪GOVERNER CIRCUIT BOARD SECTION≫
M401	87-532-674	MOTOR Ass'y

Symbol No.	Part No.	Description
		≪MISSCELLANEOUS≫
M402	87-045-210	REEL MOTOR Ass'y
RPH/EH	87-046-242	REC/PB, E HEAD
SOL1,2,3	81-512-611	SOLENOID, 9ME-A (PAUSE, PLAY, RVS)
S4	87-031-537	MICRO SWITCH (POWER)
S401,402	81-505-607	LEAF SWITCH (REC ENA-FWD, REC ENA-REV)
S403,404, 405	81-505-601	LEAF SWITCH (HEAD DIRECTION, PAUSE, PLAY)
SP1,2	81-532-628	SPEAKER (WOOFER)
SP3,4	81-511-649	SPEAKER (TWEETER)
	★81-532-609	HEATSINK
CON4	★81-532-675	CONNECTOR Ass'y, 10P
CON5	★81-532-676	CONNECTOR Ass'y, 9P
CON12	★81-532-632	CONNECTOR Ass'y, 2P
CON13	★81-532-620	CONNECTOR Ass'y, 4P
		＜Capacitor＞
C501	87-010-135	10μF 25V ELECTROLYTIC BP

Note; Combination Circuit Board

The parts on the electrical parts list which are indicated by an asterisk (*) are supplied as one single combined circuit board. Therefore, they will not be supplied separately. If this becomes necessary, please order the entire circuit board.

Combination circuit board 81-532-661
- **PCB-B 81-532-669**
- **PCB-C 81-532-670**
- **PCB-D 81-532-671**
- **PCB-E 81-532-672**

Combination circuit board 81-506-611
- **PCB-F 81-506-612**
- **PCB-G 81-506-613**

C-MOS IC handling precaution

The C-MOS IC's construction makes this part susceptible to damage by static electricity and so take sufficient care in regard to following articles.

1. Need to be put on conductive sheet, to be put in a metallic box and to be wrapped by aluminium foil for transportation and deposit.
2. To use solder iron less than 40W (less than 260℃) of power consumption for soldering. But do not overheat more than 10 second.
3. Do not perform a conductivity test with a tester, etc. Refer to the circuit voltages of each part.
4. The ICs on the electrical parts which are indicated by an C-MOS IC symbol mark (⏚).

Practical Service Figure

＜RADIO SECTION＞

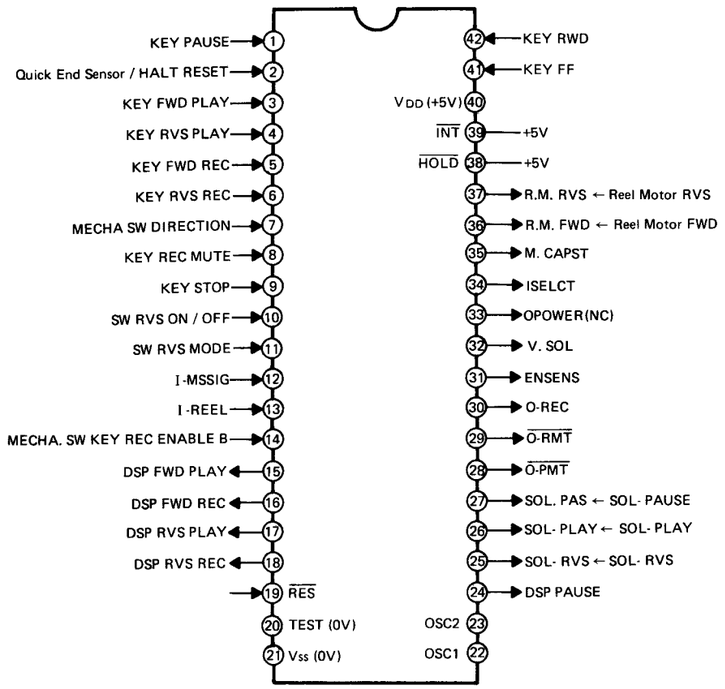
Sensitivity:	SH, SG, SF models
(IHF, THD 3%)	FM 19±4dB(at 100MHz)
(S/N 10dB)	SW_2 27±5dB(at 14.0MHz)
(S/N 10dB)	SW_1 41±4dB(at 4.0MHz)
(S/N 10dB)	MW 46±5dB(at 1000kHz)
	LE, LK, LZ models
(IHF, THD 3%)	FM 19±4dB(at 100MHz)
(S/N 10dB)	SW 32±4dB(at 12.0MHz)
(S/N 10dB)	MW 46±5dB(at 1000kHz)
(S/N 10dB)	LW 53±3dB(at 200kHz)

＜TAPE RECORDER SECTION＞

Tape speed:	4.8cm/s±3%
Record bias frequency:	61kHz
Erasing ratio:	60±5dB
Channel balance:	Less than 4dB(at REC/PB)
Distortion:	Less than 3%(at REC/PB)
Signal noise ratio:	36±5dB/46±5dB (at REC/PB, DC/AC)
Noise level:	3.3±2.0mV (AC, REC VOL MAX)
Wow and Flutter:	Less than 0.15%(WRMS)
Pinch roller pressure:	220g(2.2N)
Take up torque:	35g-cm(3.4±1.5mN・m)
FF & rewind torque:	160±40g-cm (10.78±3.9mN・m)
Input terminals:	MIC 3.5ø LINE IN PIN TYPE×2
Input sensitivity/ Impedance:	MIC 0.3mV/3kΩ LINE IN 300mV/47kΩ
Output terminal:	PHONES 3.5ø 630mV/28Ω

1. IC, LC6502B-677

1-1. Terminal name
端子名称



Signal flow in the direction indicated by the arrow.
矢印の向きは信号の流れを示す。

* All key inputs are operated by "Active High".
* KEY入力はACTIVE LOWです。

1-2. EXPLANATION OF IC PIN
端子説明

Pin No.	Symbol	Description
41 42 1 3 4 5 6 8 9 10 11	F. FF RWD PAUSE FWD PLAY RVS PLAY FWD REC RVS REC REC MUTE STOP RVS ON/OFF RVS MODE	These are the key input pins such as the operation keys (except pins No. 8, 10 & 11), and activate by "High" level. オペレーション KEY (Pin No. 8, 10, 11を除く), KEY入力。 :"HIGH" LEVELで作動します。
2	HALT Reset Quick End Sensor HALT Reset	In the HALT mode, the pin is used for HALT Reset input. (Port A turns to a port which resets the HALT mode.) It will develop to the HALT mode about six seconds after the STOP or only PAUSE mode is set. PLAY (REC PLAY) 時には、Quick End Sensor入力として使用します。 ("HIGH" LEVELで動作) HALT時は、HALT解除入力として使用しています。(Port Aは、HALTモードの解除Portとなっています。) 尚 HALTモードには、STOP, 単独PAUSEより約6秒後になります。
14	REC ENABLE RVS REC ENABLE RVS MS, Cue/Review	This pin activates as a switch which selects the CUE/REV mode, only when SYSTEM RESET → ON (INITIALIZE) ... that is, when turning power on. Normally, the pin activates as status input for REC ENABLE (reverse side) of the mechanism. [This pin selects the ENABLE (REC) mode by "High" level.] SYSTEM RESET → ON (INITIALIZE) 時 (電源投入時) にのみ MS切換SWとして働き、通常は、メカニズムのREC ENABLE (RVS側) のステイタス入力として働きます。["HIGH" レベルでMSモード、ENABLE (REC) モードとして動作します。]
7	HEAD DIRECTION	This is an status input pin for the mechanism ... the head's direction. By "High" level, the head turns to the FWD direction. メカニズムのステイタス (ヘッドの向き) 入力です。 "HIGH" レベルで HEADは、FWD方向を向いています。
12	I-MSSIG	This pin is not connected to the circuit. MS曲間入力に用います。"HIGH" レベルで曲あり、 LOW" レベルで曲なしと判断します。 (GNDもしくは+5Vに接続します。)
13	I-REEL	This is an input pin for revolution pulses of Take-up reel, and is used for the Auto-stop detection and tape slip detection in the MS mode. TAKE-UP側REELの回転PULSE入力で、AUTO STOP検出、MS時のテープのスリップ検出に用います。
15 16 17 18 24	DSP FWD PLAY DSP FWD REC DSP RVS PLAY DSP RVS REC DSP PAUSE	These are output pins for the display LEDs. When illuminating, these turn to "High" levels. ディスプレイLED用出力です。 点灯時は、"HIGH" レベルが出力されます。
25	SOL-RVS	This is an output pin for the reverse solenoid, and turns to "High" level for about 64 ms when head-pivoting. RVS SOL出力、ヘッド反転時、約 64 msの間 "HIGH" レベルとなります。

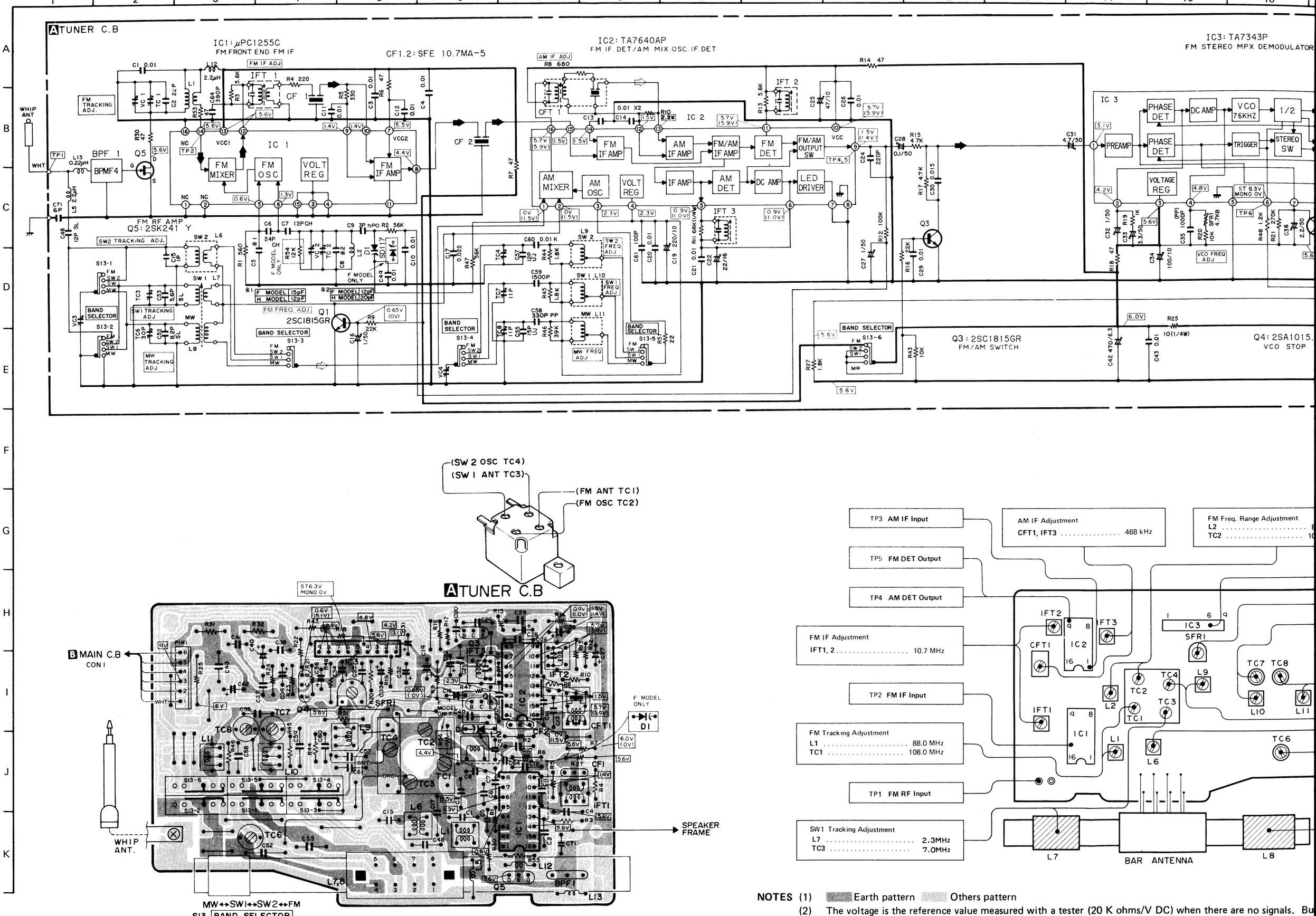
Pin No.	Symbol	Descript
26	SOL-PLAY	This is an output pin for the PLAY sole modes of the (REC)-PLAY, (REC)-PL PLAY SOL出力、(REC)-PLAY, (RE "HIGH" レベルとなります。
27	SOL-PAUSE	This is an output pin for the PAUSE so modes of (REC)-PLAY PAUSE, CUE PAUSE-SOL出力、(REC)-PLAY PA なります。
28	$\overline{\text{O-PMT}}$	This is an output pin for the PLAY mute the mechanism is stabilized so as to reset t the muting circuit until the mechanism is st pin turns to "Low" level. プレイミュート出力です。(REC) PLAYにな レベルになり、ミューティングを解除します。ま ミューティングがかかります。PAUSE時 "L
29	$\overline{\text{O-RMT}}$	This is an output pin for the REC mute, mechanism is stabilized so as to reset the m When head-pivoting, it operates the muting ed. レックミュート出力です。REC PLAYになり レベルになり、ミューティングを解除します。但 までミューティングがかかります。
30	O-REC	This is an output pin for a switch which se "High" level in the REC PLAY (PAU When head-pivoting, this pin turns to "Low ed. 録再切換出力で、REC PLAY (PAUSE) 但し、ヘッド反転時は、メカが安定する迄 "LO
31	ENSENS	This is an output pin for selecting the HA "Low" level. Quick End Sensor入力と、HALT解除入力の "HIGH" でQuick End Sensor入力となりま
32	V. SOL	This is an output pin for the off-cam check It lets flow the electricity current in the capstan motor revolves with a constant speed "High" level. カム外れ対策出力端子です。 M. CAPSTが定速回転に入り、時間的余裕を 出力です。"HIGH" でSOL動作します。
33	O・POWER	This pin is not connected to the circuit. マイコン動作時は "HIGH" レベルの出力です です。(本来 POWER LED用に設けた出力で
34	ISELCT	This is an output pin for selecting the RE Review input. When switching power on (RESET → ON 80 μs and reads the Cue/Review input in t to "Low" level. REC ENABLE RVSとMS, Cue/Revi RESET → ON時(電源投入時)に、約 80 μs かCue/Review入力を読み込みます。その後は、

CS-R10 SHS,SHR,SHB,SHJS,SHJR,SHJB,LES,LER,LEB,LKS,LKB,SGS,SGB,LZS,LZR,LZB,SFJS

	Description
	This is an output pin for the PLAY solenoid, and turns to "High" level in the modes of the (REC)-PLAY, (REC)-PLAY PAUSE, CUE／REV. PLAY SOL出力、(REC)-PLAY, (REC)-PLAY PAUSE, MS時のみ"HIGH"レベルとなります。
	This is an output pin for the PAUSE solenoid, and turns to "High" level in the modes of (REC)-PLAY PAUSE, CUE／REV. PAUSE-SOL出力、(REC)-PLAY PAUSE, MS時のみ"HIGH"レベルとなります。
	This is an output pin for the PLAY mute, and turns to "High" level soon after the mechanism is stabilized so as to reset the mute. When head-pivoting, it operates the muting circuit until the mechanism is stabilized. In the PAUSE mode, the pin turns to "Low" level. プレイミュート出力です。(REC) PLAYになり、メカニズムが安定すれば、"HIGH"レベルになり、ミューティングを解除します。また、ヘッド反転時には、メカが安定するまでミューティングがかかります。PAUSE時"LOW"レベル。
	This is an output pin for the REC mute, and turns to "High" level soon after the mechanism is stabilized so as to reset the mute. When head-pivoting, it operates the muting circuit until the mechanism is stabilized. レックミュート出力です。REC PLAYになり、メカニズムが安定すれば、"HIGH"レベルになり、ミューティングを解除します。但しヘッドが反転する際には、メカが安定するまでミューティングがかかります。
	This is an output pin for a switch which selects REC or PB, and turns to "High" level in the REC PLAY (PAUSE) mode only. When head-pivoting, this pin turns to "Low" level until the mechanism is stabilized. 録再切換出力で、REC PLAY (PAUSE) 時のみ"HIGH"レベルとなります。 但し、ヘッド反転時は、メカが安定する迄"LOW"レベルとなります。
	This is an output pin for selecting the HALT Reset input. "Low" level. Quick End Sensor入力と、HALT解除入力の切換用出力です。 "HIGH"でQuick End Sensor入力となります。
	This is an output pin for the off-cam check. It lets flow the electricity current in the solenoid circuit timely after the capstan motor revolves with a constant speed. The solenoid will be exerted by "High" level. カム外れ対策出力端子です。 M. CAPSTが定速回転に入り、時間的余裕を持ってSOL回路に電流が流れる様に切換る出力です。"HIGH"でSOL動作します。
	This pin is not connected to the circuit. マイコン動作時は"HIGH"レベルの出力です。HALT動作では"LOW"レベル出力です。(本来 POWER LED用に設けた出力です。)
	This is an output pin for selecting the REC ENABLE RVS input or Cue／Review input. When switching power on (RESET → ON), it turns to "High" level for about 80 μs and reads the Cue／Review input in that moment. After that, the pin turns to "Low" level. REC ENABLE RVSとMS,Cue／Review入力の切換用出力です。 RESET → ON時(電源投入時)に、約 80 μs "HIGH"レベルを出力し、その間にMSかCue／Review入力を読み込みます。その後は、"LOW"レベルを出力します。

Pin No.	Symbol	Description
35	M. CAPST	This pin is used for the main motor control, and when this pin turns to "High" level, the motor will turn. Only in the (REC)-PLAY, (REC)-PLAY PAUSE, CUE／REV modes, the pin turns to "High" level. メインモーターの制御に用い、"HIGH"レベルでモーターが回ります。 (REC)-PLAY, (REC)-PLAY PAUSE, MS時のみ"HIGH"レベルとなります。
36	REEL-MOTOR-FWD	This is an output pin for setting the sub-motor to normal revolution. In the FF, CUE modes, the pin turns to "High" level. サブモーター正転出力です。FF, CUE MSの時のみ"HIGH"レベルとなります。
37	REEL-MOTOR-RVS	This is an output pin for setting the sub-motor to reverse revolution. In the REW, REV modes, the pin turns to "High" level. サブモーター反転出力です。REW, REV MSの時のみ"HIGH"レベルとなります。
19	$\overline{\text{RESET}}$	This pin turns to "High" level with delay of the CR time constant after supplied the power V_{DD}, so as to reset the MPU. 電源V_{DD}より、CRの時定数分だけ遅れて"HIGH"レベルになることにより、MPUは、RESETされます。
20	TEST	This pin is connected to 0 V (GND). 0 V (GND)に接続します。
21	Vss	This pin is connected to GND. GNDに接続します。
22 23	OSC1 OSC2	These are the MPU clock input pins ----- 400kHz. MPU クロック入力 400kHz
38	$\overline{\text{HOLD}}$	This pin is connected to + 5 V in this model. + 5 Vに接続します。
39	$\overline{\text{INT}}$	This pin is connected to + 5 V in this model. + 5 Vに接続します。
40	V_{DD}	+ 5 V (Power supply pin). + 5 V (電源端子)

SCHEMATIC DIAGRAM·WIRING—1 (CS-R10 SHS,SHR,SHB,SHJS,SHJR,SHJB,SGS,SGB,SFJS)



NOTES (1) Earth pattern Others pattern

(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. Bu

4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

: μPC1255C
FRONT END. FM IF

CF1.2: SFE 10.7MA-5

IC2: TA7640AP
FM IF. DET/AM MIX. OSC. IF. DET

IC3: TA7343P
FM STEREO MPX DEMODULATOR

FM IF ADJ
IFT 1
CF 1
CF 2
IC 1
FM OSC
VOLT REG
FM IF AMP
AM IF ADJ
R8 680
CFT 1
IC 2
IFT 2
IFT 3
FM IF AMP
AM IF AMP
FM/AM IF AMP
FM DET
FM/AM OUTPUT SW
AM MIXER
AM OSC
VOLT REG
IF AMP
AM DET
DC AMP
LED DRIVER
IC 3
PREAMP
PHASE DET
PHASE DET
DC AMP
VCO 76KHZ
1/2
1/2
TRIGGER
STEREO SW
1/2
VOLTAGE REG
DECODER
RCH
LCH
ST 6.3V MONO 0V
VCO FREQ ADJ
TP6
TP4,5
F MODEL ONLY
*1 F MODEL 15pF H MODEL 12pF
*2 F MODEL 12pF H MODEL 20pF
FM FREQ. ADJ
Q1 2SC1815GR
BAND SELECTOR
S13-3
BAND SELECTOR
S13-4
BAND SELECTOR
S13-5
BAND SELECTOR
S13-6
SW 2 FREQ ADJ
SW 1 FREQ ADJ
MW FREQ ADJ
SW 1 L10
MW L11
Q3: 2SC1815GR
FM/AM SWITCH
Q4: 2SA1015.GR
VCO STOP
ST.IND/FORCD
TUNING IND.
VCC
RCH
GND.
LCH
PIN1
BMAIN C.B
CON1

(SW 2 OSC TC4)
(SW 1 ANT TC3)
(FM ANT TC1)
(FM OSC TC2)

ATUNER C.B

ST6.3V MONO 0V

F MODEL ONLY

SPEAKER FRAME

-SW1↔SW2↔FM
ND SELECTOR

TP3 AM IF Input

TP5 FM DET Output

TP4 AM DET Output

FM IF Adjustment
IFT1, 2 ..... 10.7 MHz

TP2 FM IF Input

FM Tracking Adjustment
L1 ..... 88.0 MHz
TC1 ..... 108.0 MHz

TP1 FM RF Input

SW1 Tracking Adjustment
L7 ..... 2.3MHz
TC3 ..... 7.0MHz

AM IF Adjustment
CFT1, IFT3 ..... 468 kHz

FM Freq. Range Adjustment
L2 ..... 87.0 MHz
TC2 ..... 109.0 MHz

V.C.O. Frequency Adjustment
SFR1 ..... 38 kHz ± 40 Hz

SW1 Freq. Range Adjustment
L10 ..... 2.1MHz
TC7 ..... 7.3MHz

MW Freq. Range Adjustment
L11 ..... 515kHz
TC8 ..... 1.650kHz

SW2 Freq. Range Adjustment
L9 ..... 6.8MHz
TC4 ..... 22.5MHz

SW2 Tracking Adjustment
L6 ..... 7.0MHz

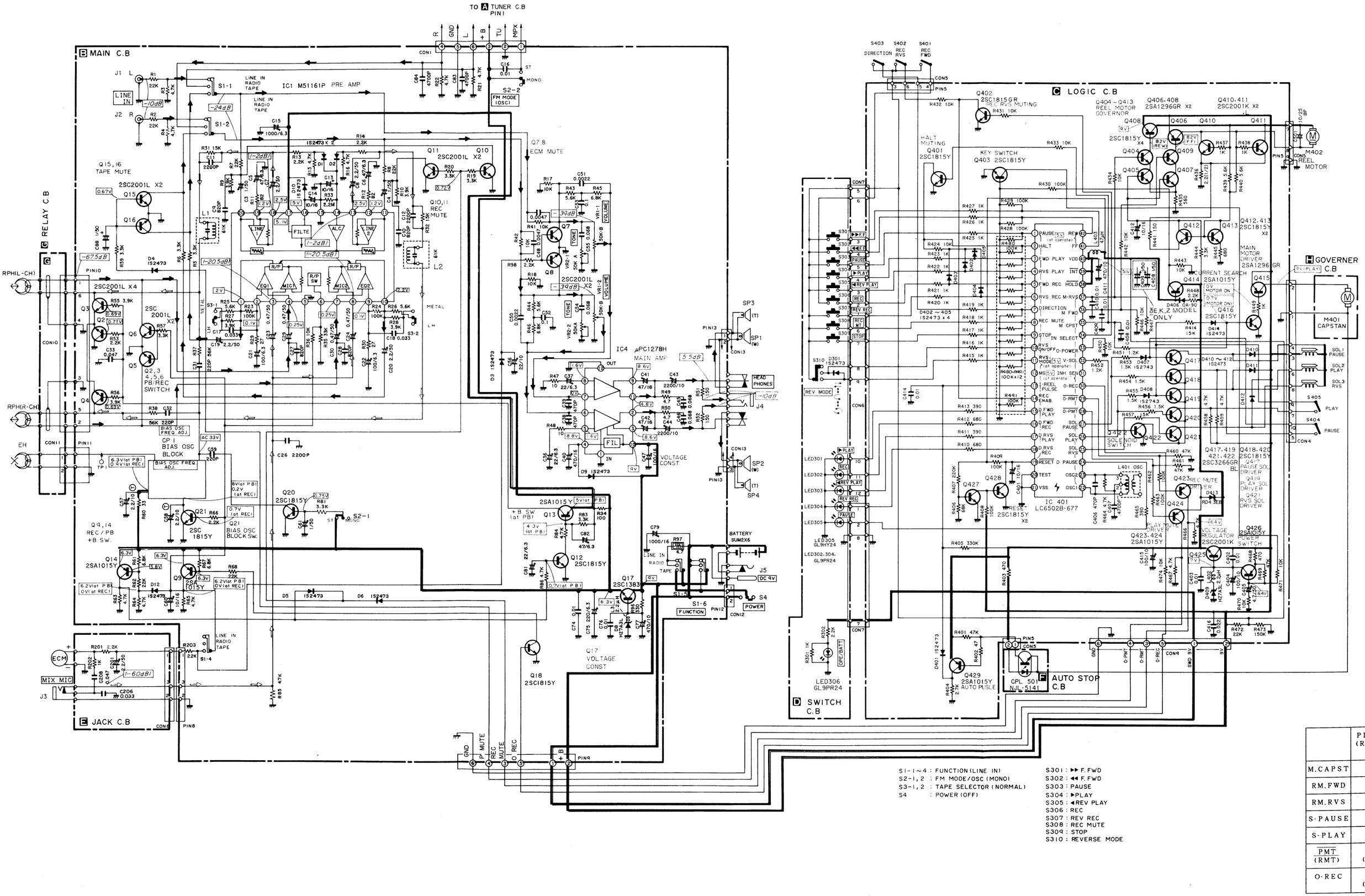
MW Tracking Adjustment
L8 ..... 600kHz
TC6 ..... 1,440kHz

TP6 V.C.O. Test Point

IFT2 IFT3 CFT1 IC2 IC1 IC3 SFR1 TC7 TC8 TC4 TC2 TC3 TC1 L9 L2 L10 L11 L1 L6 TC6 L7 L8 BAR ANTENNA

NOTES (1) Earth pattern Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. But ( ) is with AM reception.

SCHEMATIC DIAGRAM–2 (CS-R10 SHS,SHR,SHB,SHJS,SHJR,SHJB,LES,LER,LEB,LKS,LKB,SGS,SGB,LZS,LZR,LZB,SFJS)

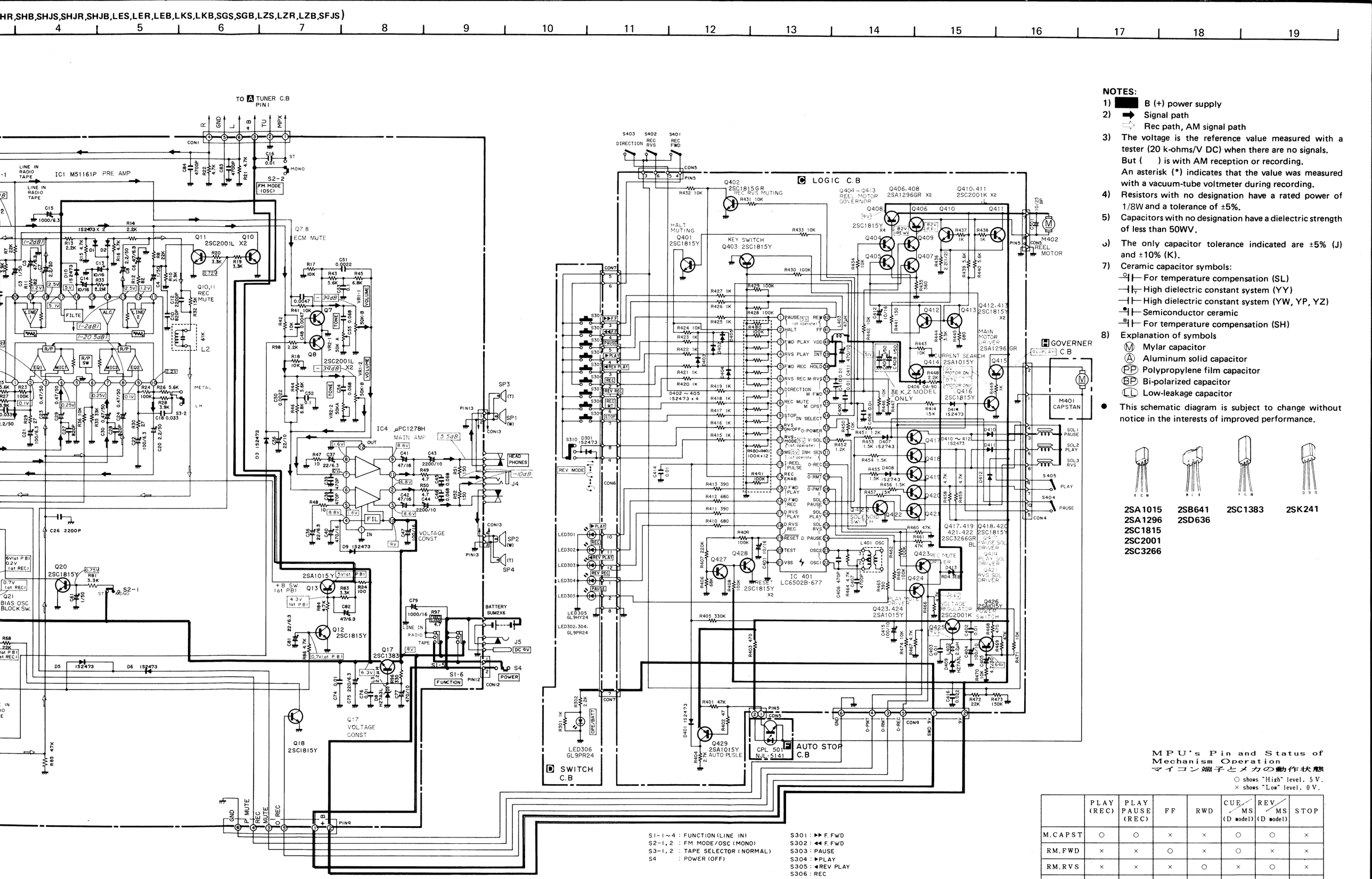


S1-1~4 : FUNCTION (LINE IN)
S2-1, 2 : FM MODE/OSC (MONO)
S3-1, 2 : TAPE SELECTOR (NORMAL)
S4 : POWER (OFF)

S301 : ▶▶ F.FWD
S302 : ◀◀ F.FWD
S303 : PAUSE
S304 : ▶PLAY
S305 : ◀REV PLAY
S306 : REC
S307 : REV REC
S308 : REC MUTE
S309 : STOP
S310 : REVERSE MODE

	PL (RE
M.CAPST	○
RM.FWD	×
RM.RVS	×
S-PAUSE	×
S-PLAY	○
PMT (RMT)	○ (○
O-REC	× (○

(HR,SHB,SHJS,SHJR,SHJB,LES,LER,LEB,LKS,LKB,SGS,SGB,LZS,LZR,LZB,SFJS)



S1-1~4 : FUNCTION (LINE IN)
S2-1, 2 : FM MODE/OSC (MONO)
S3-1, 2 : TAPE SELECTOR (NORMAL)
S4 : POWER (OFF)

S301 : ▶▶ F.FWD
S302 : ◀◀ F.FWD
S303 : PAUSE
S304 : ▶PLAY
S305 : ◀REV PLAY
S306 : REC
S307 : REV REC
S308 : REC MUTE
S309 : STOP
S310 : REVERSE MODE

NOTES:

1) ■ B (+) power supply
2) ➡ Signal path
   ⇨ Rec path, AM signal path
3) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals.
   But ( ) is with AM reception or recording.
   An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
4) Resistors with no designation have a rated power of 1/8W and a tolerance of ±5%.
5) Capacitors with no designation have a dielectric strength of less than 50WV.
6) The only capacitor tolerance indicated are ±5% (J) and ±10% (K).
7) Ceramic capacitor symbols:
   -|| For temperature compensation (SL)
   -|Y High dielectric constant system (YY)
   -|| High dielectric constant system (YW, YP, YZ)
   -●|| Semiconductor ceramic
   -⊗|| For temperature compensation (SH)
8) Explanation of symbols
   (M) Mylar capacitor
   (A) Aluminum solid capacitor
   (PP) Polypropylene film capacitor
   (BP) Bi-polarized capacitor
   (LL) Low-leakage capacitor

● This schematic diagram is subject to change without notice in the interests of improved performance.

2SA1015 2SA1296 2SC1815 2SC2001 2SC3266 | **2SB641 2SD636** | **2SC1383** | **2SK241**

MPU's Pin and Status of Mechanism Operation
マイコン端子とメカの動作状態

○ shows "High" level, 5 V.
× shows "Low" level, 0 V.

	PLAY (REC)	PLAY PAUSE (REC)	FF	RWD	CUE / MS (D model)	REV / MS (D model)	STOP
M.CAPST	○	○	×	×	○	○	×
RM.FWD	×	×	○	×	○	×	×
RM.RVS	×	×	×	○	×	○	×
S-PAUSE	×	○	×	×	○	○	×
S-PLAY	○	○	×	×	○	○	×
PMT (RMT)	○ (○)	× (×)	×	×	×	×	×
O-REC	× (○)	× (○)	×	×	×	×	×

3. Bias OSC Frequency Adjustment
Settings: • FM MODE (OSC):MONO(•)
• Test point: TP1
• Adjustment location: CP1
Method: • Adjust CP1 so that the OSC frequency is 6.1kHz.

Bias OSC Frequency Test Point

BATTERY SUM-2x6 (9V)

SHIELD PAPER

J3 MIX MIC

E JACK C.B

MICROPHONE ECM

SP4 (TWEETER Rch)

SP2 (WOOFER Rch)

PANEL

SP3 (TWEETER Lch)

SP1 (WOOFER Lch)

To A TUNER C.B

CON13

B MAIN C.B PIN13

S301 ▶▶F. FWD

S304,LED3 ▶PLAY

D SWIT

J5 DC JACK

J4 PHONES

J1,2 LINE IN

B MAIN C.B

S1 FUNCTION

S2 FM MODE/(OSC)

S3 TAPE SELECTOR

VR2 TONE

VR1 VOLUME

S306,LED302 REC

S310 REVERSE MODE

S401 (REC ENA FWD SWITCH)

S402 (REC ENA REV SWITCH)

SOL3 (REV SOLENOID)

SOL2 (PLAY SOLENOID)

SOL1 (PAUSE SOLENOID)

M402 (REEL MOTOR)

M401 (MOTOR)

S405 (PLAY SWITCH)

S404 (PAUSE SWITCH)

S403 (HEAD DIRECTION SWITCH)

To A TUNER C.B PIN1

S4 (POWER SWITCH)

CON12

B MAIN C.B PIN12

H GOVERNER C.B

E, K, Z MODEL ONLY

C LOGIC C.B

G RELAY C.B

F AUTO STOP C.B

CP401

RP/E HEAD

CON10

B MAIN C.B PIN10

CON11

B MAIN C.B PIN11

FWD

RP/E HEAD

NOTES (1) Earth pattern Others pattern

(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

The ICs on the electrical parts which are indicated by an C- MOS IC symbol mark (⚡).

4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

Bias OSC Frequency Test Point

BATTERY
SUM-2x6 (9V)

SHIELD PAPER

J3 MIX MIC

E JACK C.B

MICROPHONE ECM

SP4 (TWEETER Rch)

SP2 (WOOFER Rch)

PANEL C503

To A TUNER C.B

SP3 (TWEETER Lch)

SP1 (WOOFER Lch)

CON13

B MAIN C.B PIN13

S301 F. FWD

S302 F. FWD

S304, LED301 PLAY

LED306 OPERATE/BATT

S305, LED303 REV PLAY

D SWITCH C.B

B MAIN C.B

S401 (REC ENA FWD SWITCH)

To A TUNER C.B PIN1

S402 (REC ENA REV SWITCH)

SOL3 (REV SOLENOID)

M402 (REEL MOTOR)

SOL2 (PLAY SOLENOID)

SOL1 (PAUSE SOLENOID)

M401 (MOTOR)

S405 (PLAY SWITCH)

S404 (PAUSE SWITCH)

S403 (HEAD DIRECTION SWITCH)

S4 (POWER SWITCH)

CON12

B MAIN C.B PIN12

H GOVERNER C.B

CON4

CON5

E, K, Z MODEL ONLY

C LOGIC C.B

IC401

IC1

G RELAY C.B

CP401

F AUTO STOP C.B

RP/E HEAD

CON10

B MAIN C.B PIN10

CON11

B MAIN C.B PIN11

S1 FUNCTION

S2 FM MODE/(OSC)

S3 TAPE SELECTOR

VR2 TONE

VR1 VOLUME

S306, LED302 REC

S309 STOP

S310 REVERSE MODE

S303, LED305 PAUSE

To B MAIN C.B PIN9

S307, LED304 REV REC

S308 REC MUTE

FWD REV

RP/E HEAD

2. Azimuth Adjustment
Settings: • Test tape: TTA-317HSS
• Adjustment location:
Forward azimuth adjustment screw
Reverse azimuth adjustment screw

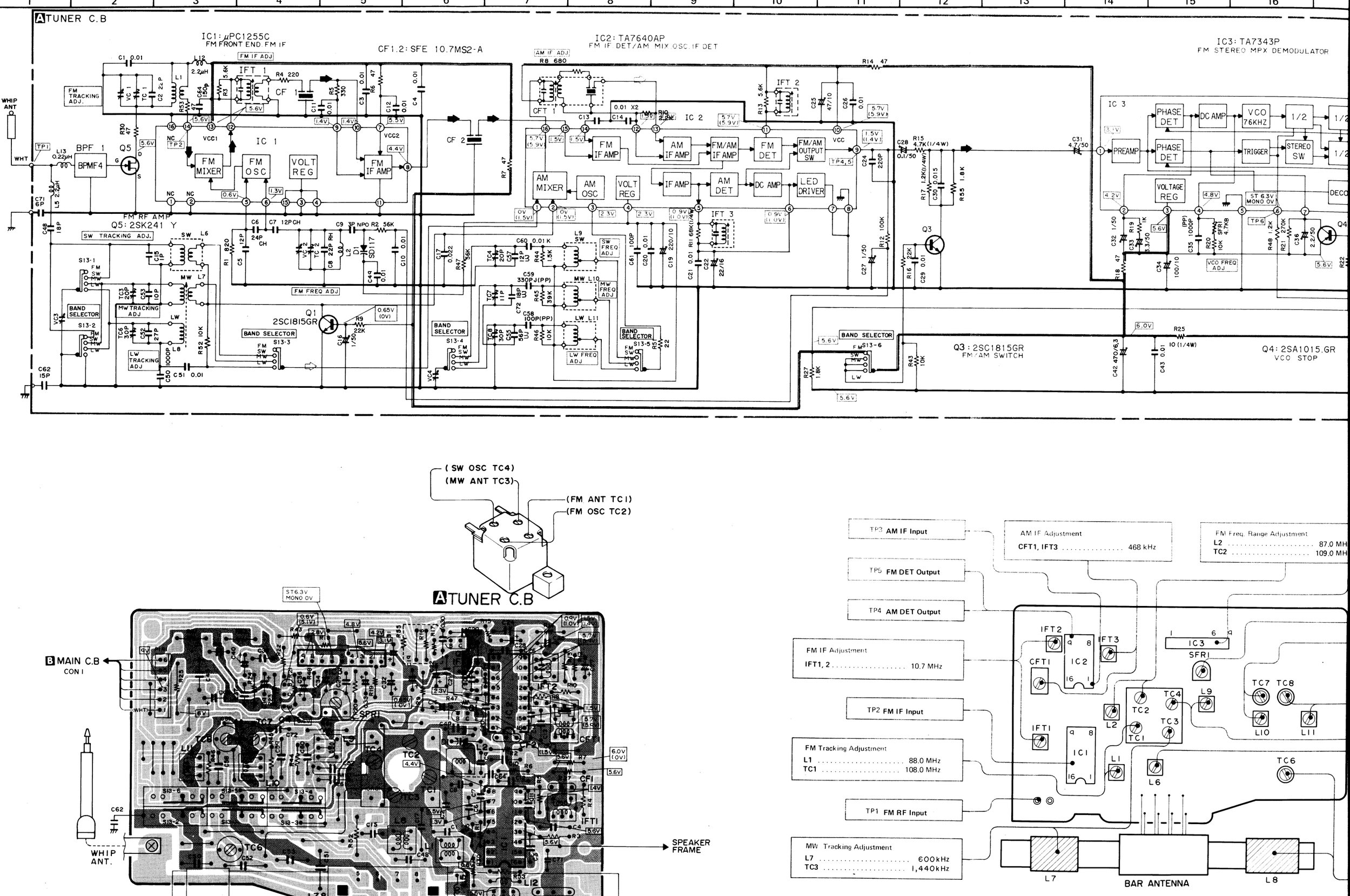
Others pattern

nce value measured with a tester (20 K ohms/V DC) when there are no signals.

s that the value was measured with a vacuum-tube voltmeter during recording.

parts which are indicated by an C- MOS IC symbol mark (⚡).

SCHEMATIC DIAGRAM·WIRING—3 (CS-R10 LES, LER, LEB, LKS, LKB, LZS, LZR, LZB)



NOTES (1) Earth pattern Others pattern

(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. But (

R10 LES,LER,LEB,LKS,LKB,LZS,LZR,LZB)

4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

PC1255C
ONT END.FM IF

CF1.2: SFE 10.7MS2-A

IC2: TA7640AP
FM IF.DET/AM MIX.OSC.IF DET

IC3: TA7343P
FM STEREO MPX DEMODULATOR

FM IF ADJ
AM IF ADJ
IFT 1
IFT 2
IFT 3
CFT 1
CF 1
CF 2
IC 1
IC 2
IC 3
FM OSC
VOLT REG
FM IF AMP
AM MIXER
AM OSC
IF AMP
AM IF AMP
AM DET
FM/AM IF AMP
FM DET
DC AMP
FM/AM OUTPUT SW
LED DRIVER
PREAMP
PHASE DET
VCO 76KHZ
1/2
TRIGGER
STEREO SW
VOLTAGE REG
DECODER
ST 6.3V MONO OV
FM FREQ ADJ
AM FREQ ADJ
SW FREQ ADJ
MW FREQ ADJ
LW FREQ ADJ
VCO FREQ ADJ
BAND SELECTOR
S13-3
S13-4
S13-5
S13-6
Q1 2SC1815GR
Q3: 2SC1815GR
FM/AM SWITCH
Q4: 2SA1015.GR
VCO STOP
PIN1
ST. IND/FORCD
TUNING IND.
VCC
RCH
GND.
LCH
BMAIN C.B
CON 1

(SW OSC TC4)
(MW ANT TC3)
(FM ANT TC1)
(FM OSC TC2)
ATUNER C.B
SPEAKER FRAME
SW FM
ELECTOR

TP3 AM IF Input

AM IF Adjustment
CFT1, IFT3 ..... 468 kHz

FM Freq. Range Adjustment
L2 ..... 87.0 MHz
TC2 ..... 109.0 MHz

TP6 V.C.O. Test Point

TP5 FM DET Output

V.C.O. Frequency Adjustment
SFR1 ..... 38 kHz - 40 Hz

TP4 AM DET Output

FM IF Adjustment
IFT1, 2 ..... 10.7 MHz

MW Freq. Range Adjustment
L10 ..... 515 kHz
TC7 ..... 1,650 kHz

TP2 FM IF Input

LW Freq. Range Adjustment
L11 ..... 145 kHz
TC8 ..... 320 kHz

FM Tracking Adjustment
L1 ..... 88.0 MHz
TC1 ..... 108.0 MHz

SW Freq. Range Adjustment
L9 ..... 5.8 MHz
TC4 ..... 18.5 MHz

TP1 FM RF Input

SW Tracking Adjustment
L6 ..... 5.9 MHz

MW Tracking Adjustment
L7 ..... 600 kHz
TC3 ..... 1,440 kHz

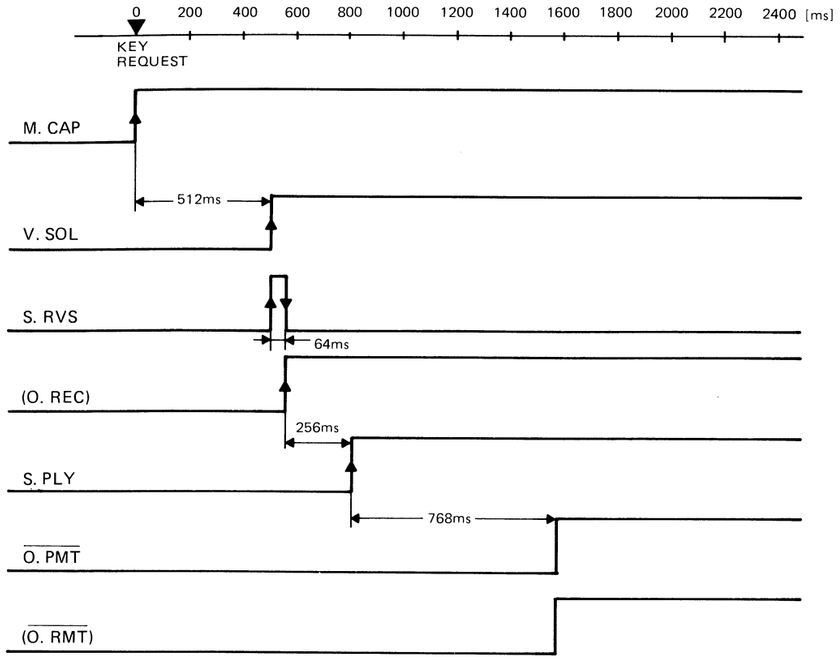
LW Tracking Adjustment
L8 ..... 150 kHz
TC6 ..... 300 kHz

BAR ANTENNA

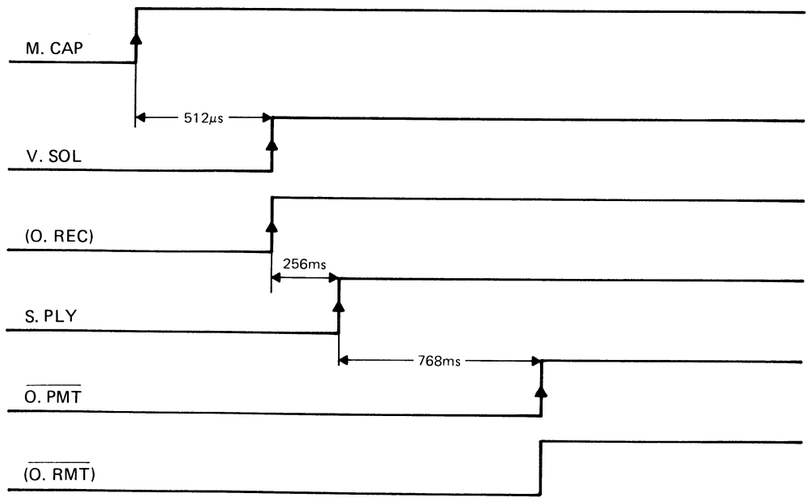
NOTES (1) Earth pattern Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals. But ( ) is with AM reception.

TIMING CHART

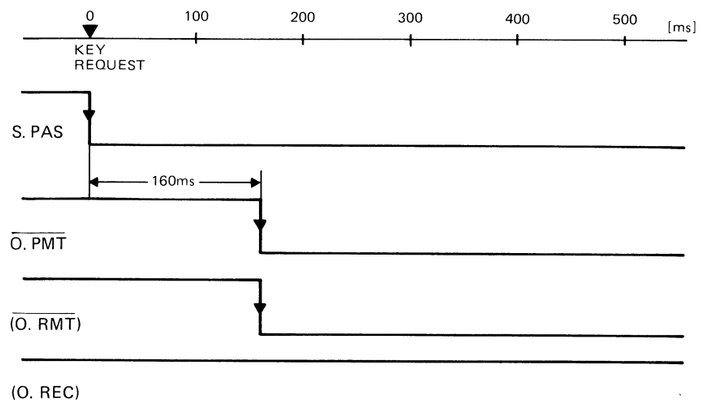
i) STOP → RVS (REC) PLAY



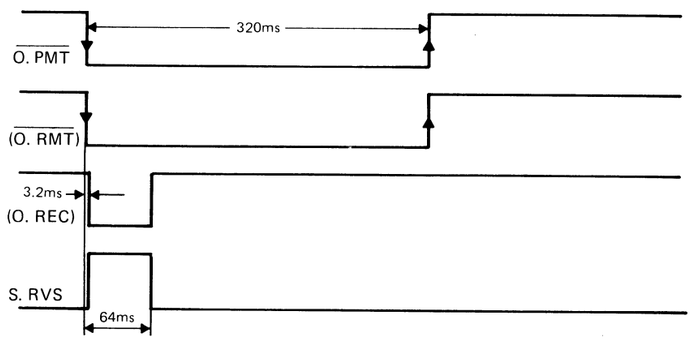
ii) STOP → (REC) PLAY



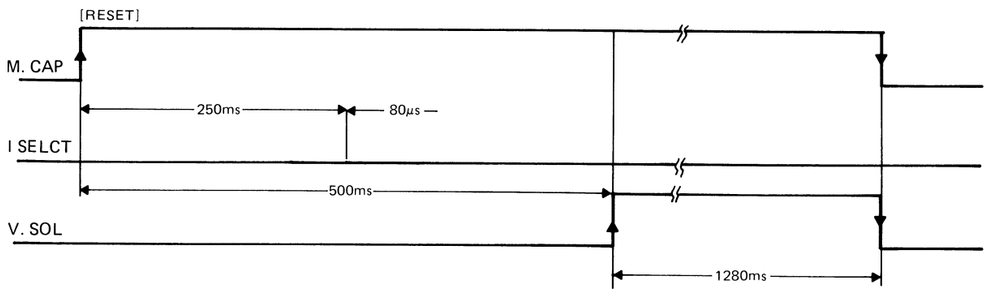
iii) (REC) PLAY PAUSE → (REC) PLAY



iv) (REC) PLAY FWD → (REC) PLAY RVS



v) INITIALIZE → STOP



DISASSEMBLY INSTRUCTIONS

1. Removing Main Cabinet

1) Remove the 6 screws and 2 knobs. (See Figure-1)

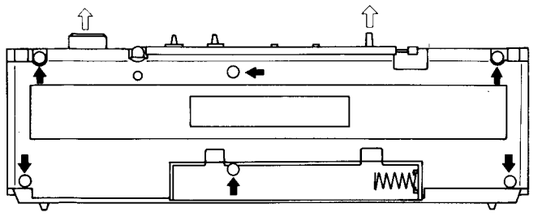


Fig. 1

2) After open the cassette lid and separate the bottom of the cabinet slightly, remove the main cabinet unhooking the whip-antenna section of the cabinet as illustrated. Remove the 2 knobs simultaneously. (See Figure-2)

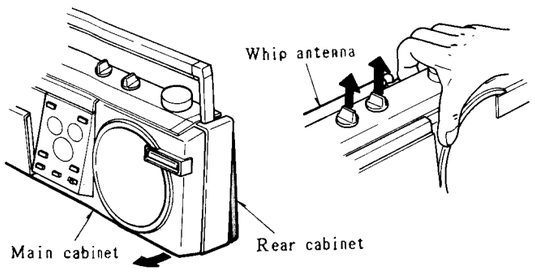


Fig. 2

2. Assembling Main Cabinet

1) Push in the push-switches, then install the main cabinet. (See Figure-3)

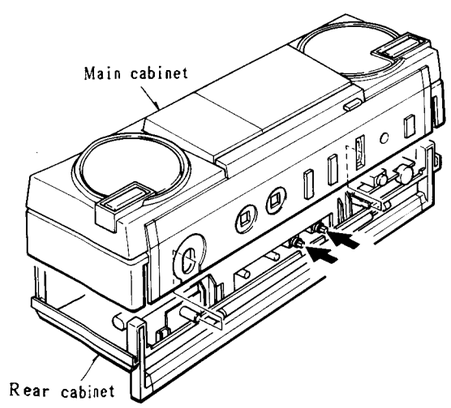


Fig. 3

3. Removing Mechanism

1) Remove the 3 red screws. (See Figure-4)

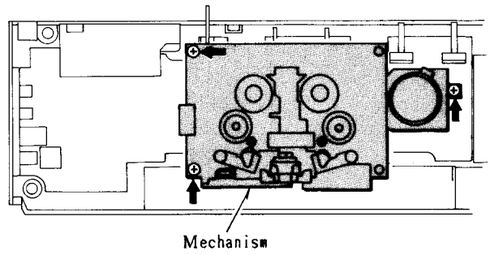


Fig. 4

4. Removing Main C.B.

1) Remove the 7 red screws.
2) Disconnect the ceramic capacitor and Remove the circuit board in the arrow direction. (See Figure-5)

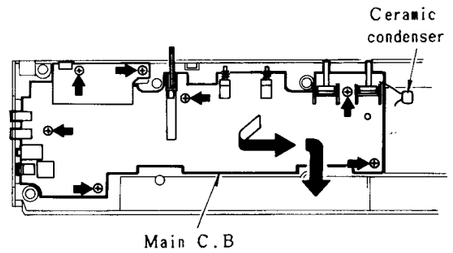
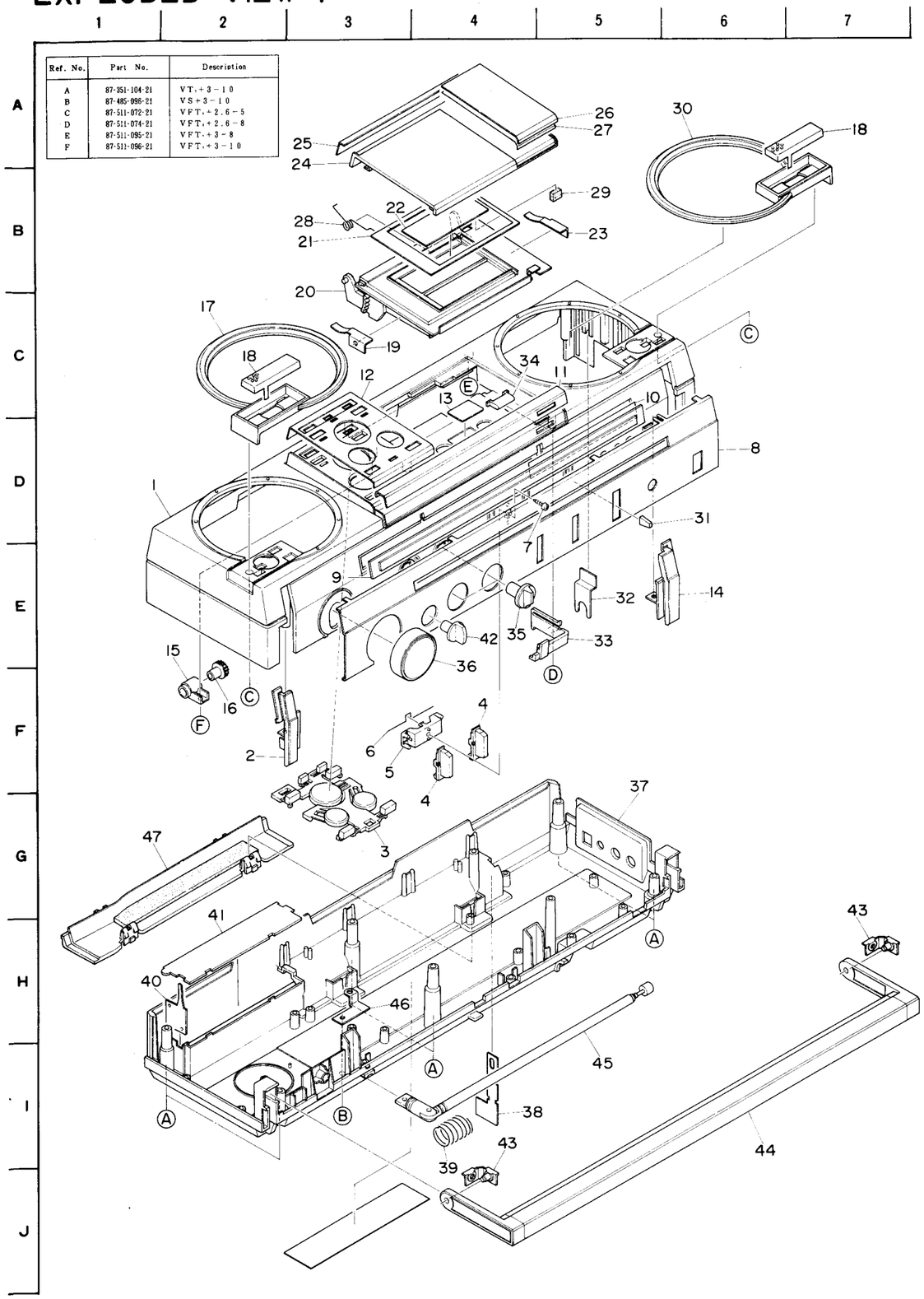


Fig. 5

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆ **MEMO** ☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

EXPLODED VIEW-1

Ref. No.	Part No.	Description
A	87-351-104-21	VT,+3-10
B	87-485-096-21	VS+3-10
C	87-511-072-21	VFT,+2.6-5
D	87-511-074-21	VFT,+2.6-8
E	87-511-095-21	VFT,+3-8
F	87-511-096-21	VFT,+3-10



PARTS LIST

MECHANICAL PARTS LIST

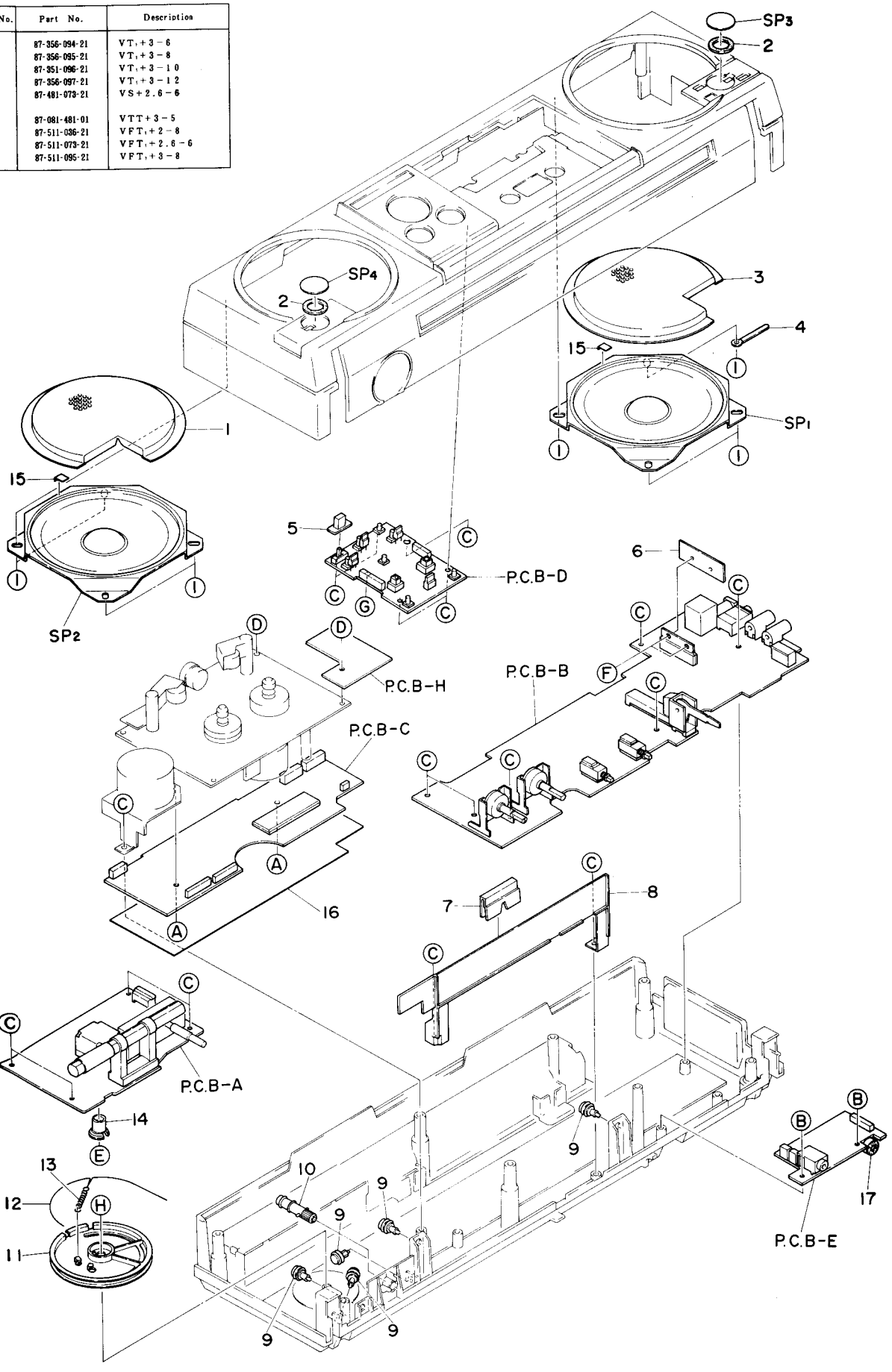
- [S]=SILVER [B]=BLACK [R]=RED
- ★mark means less required items and availabilities may be limited.

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1-1~14	09-018-049	MAIN CABINET [S] (SH. SHJ. SG only)	※	1
		09-018-051	MAIN CABINET [R] (SH. SHJ only)	※	1
		09-018-050	MAIN CABINET [B] (SH. SHJ. SG only)	※	1
		09-018-052	MAIN CABINET [S] (MC. MU only)	※	1
		09-018-054	MAIN CABINET [R] (MC only)	※	1
		09-018-053	MAIN CABINET [B] (MC. MU only)	※	1
		09-018-045	MAIN CABINET [S] (LE. LK. LZ only)	※	1
		09-018-047	MAIN CABINET [R] (LE. LZ only)	※	1
		09-018-046	MAIN CABINET [B] (LE. LK. LZ only)	※	1
		09-018-048	MAIN CABINET [S] (SFJ only)	※	1
	1-1	★81-532-092	MAIN CABINET [S]	※	1
		★81-532-038	MAIN CABINET [R]	※	1
		★81-532-042	MAIN CABINET [B]	※	1
	1-2	★81-532-004	SIDE DECORATIVE PLATE R	※	1
	1-3	★81-532-037	BUTTON. RECORD	※	1
	1-4	★81-532-025	PUSH-BUTTON	※	2
	1-5	★81-532-212	HOLDER. PUSH-BUTTON	※	1
	1-6	81-532-213	T-SPRING. BUTTON	※	1
	1-7	87-321-095	QT,+3-8		1
	1-8	★81-532-090	PANEL. TOP [S. B] (SH. SHJ. SG only)	※	1
		★81-532-115	PANEL. TOP [R] (SH. SHJ only)	※	1
		★81-532-089	PANEL. TOP [S. B] (MC. MU only)	※	1
		★81-532-131	PANEL. TOP [R] (MC only)	※	1
		★81-532-114	PANEL. TOP [S. B] (LE. LK. LZ only)	※	1
		★81-532-116	PANEL. TOP [R] (LE. LZ only)	※	1
		★81-532-135	PANEL. TOP [S] (SFJ only)	※	1
	1-9	★81-532-003	WINDOW. DIAL	※	1
	1-10	★81-532-072	SHEET. DIAL	※	1
	1-11	★81-532-097	HEAD PLATE [S]	※	1
		★81-532-051	HEAD PLATE [R]	※	1
		★81-532-075	HEAD PLATE [B]	※	1
	1-12	★81-532-132	PLATE. CONTROL [S]	※	1
		★81-532-133	PLATE. CONTROL [R]	※	1
		★81-532-134	PLATE. CONTROL [B]	※	1
	1-13	★81-532-080	TAPE INDICATION	※	1
	1-14	★81-532-005	SIDE DECORATIVE PLATE L	※	1
	1-15	81-533-263	BEARING OIL-DAMP Ass'y	CA-W50	1
	1-16	81-532-209	GEAR. OIL-DAMP	※	1
	1-17	81-532-077	RING. SPEAKER NR	※	1
	1-18	81-532-008	PANCHING T	※	2
	1-19~23	09-018-057	CASSETTE BOX Ass'y	※	1
	1-19	81-511-210	P-SPRING. C-BOX R		1
	1-20	81-532-009	CASSETTE BOX	※	1
	1-21	★81-532-027	INNER PLATE. CASSETTE	※	1
	1-22	★81-532-102	PLATE. NAME CASSETTE	※	1
	1-23	81-511-211	P-SPRING. C-BOX L		1
	1-24~27	09-018-056	CASSETTE WINDOW Ass'y [S]	※	1
		09-018-015	CASSETTE WINDOW Ass'y [R]	※	1
		09-018-018	CASSETTE WINDOW Ass'y [B]	※	1

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1-24	★81-532-015	WINDOW, CASSETTE	※	1
	1-25	★81-532-013	CASSETTE UNDER PLATE	※	1
	1-26	★81-532-095	PLATE. CASSETTE [S]	※	1
		★81-532-042	PLATE. CASSETTE [R]	※	1
		★81-532-073	PLATE. CASSETTE [B]	※	1
	1-27	★81-532-221	ADHESIVE SHEET 35-75	※	1
	1-28	★81-532-211	T-SPRING, C-BOX	※	1
	1-29	★81-532-223	G CUSHION 3.5×7×8	※	1
	1-30	81-532-078	RING. SPEAKER NL	※	1
	1-31	81-532-030	KNOB, LEVER	※	1
	1-32	★81-532-206	HOLDER. DCJ	※	1
	1-33	81-532-205	EJECT LEVER	※	1
	1-34	81-532-022	EJECT BUTTON	※	1
	1-35	81-532-031	KNOB. VOLUME	※	2
	1-36	81-532-024	KNOB. TUNING	※	1
	1-37~41	09-018-055	REAR CABINET Ass'y [S]	※	1
		09-018-008	REAR CABINET Ass'y [R]	※	1
		09-018-012	REAR CABINET Ass'y [B]	※	1
	1-37	★81-532-094	REAR CABINET [S]	※	1
		81-532-044	REAR CABINET [R]	※	1
		81-532-048	REAR CABINET [B]	※	1
	1-38	★81-532-208	PLATE, BATTERY	※	1
	1-39	★82-576-236	SPRING, BATTERY		1
	1-40	★81-528-216	PLATE. BATTERY WR	CA-30	1
	1-41	★81-532-233	HOLDER. BATTERY [S]	※	1
		★81-532-215	HOLDER. BATTERY [R]	※	1
		★81-532-219	HOLDER. BATTERY [B]	※	1
	1-42	81-515-048	KNOB, BAND SELECTOR (EXCEPT U, C)	CA-70	1
	1-43	★81-532-204	HANDLE FASTNER	※	2
	1-44	★81-532-098	HANDLE [S]	※	1
		★81-532-108	HANDLE [R]	※	1
		★81-532-112	HANDLE [B]	※	1
	1-45	87-043-058	WHIP ANTENNA		1
	1-46	★81-532-203	PLATE. ANTENNA	※	1
	1-47	★81-532-101	LID. BATTERY [S]	※	1
		★81-532-063	LID. BATTERY [R]	※	1
		★81-532-071	LID. BATTERY [B]	※	1

EXPLODED VIEW-2

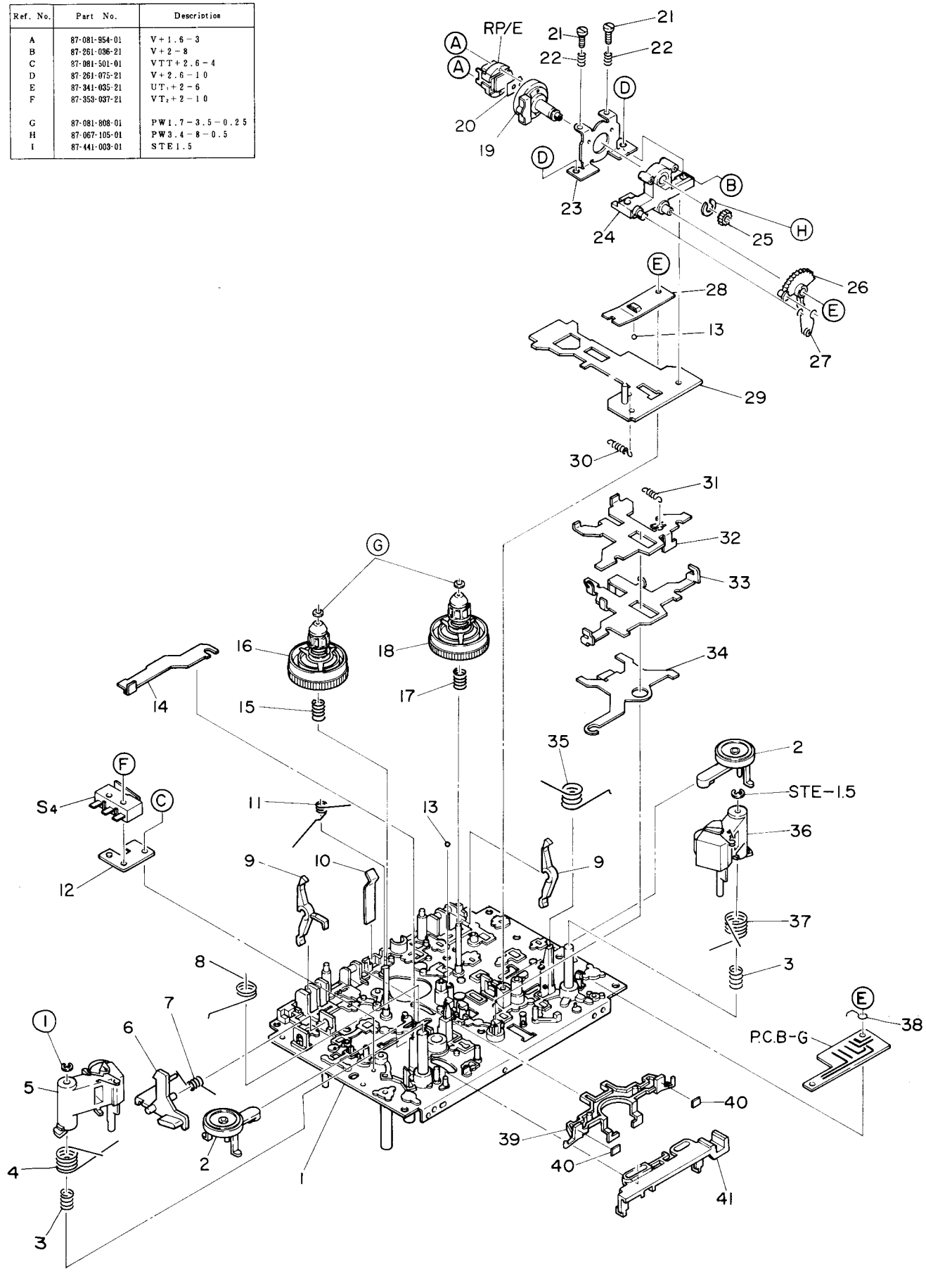
Ref. No.	Part No.	Description
A	87-356-094-21	VT1+3-6
B	87-356-095-21	VT1+3-8
C	87-351-096-21	VT1+3-10
D	87-356-097-21	VT1+3-12
E	87-481-073-21	VS+2.6-6
F	87-081-481-01	VTT+3-5
G	87-511-036-21	VFT1+2-8
H	87-511-073-21	VFT1+2.6-6
I	87-511-095-21	VFT1+3-8



Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	2-1	81-532-016	PANCHING WR	※	1
	2-2	81-532-220	CUSHION, TWEETER	※	2
	2-3	81-532-017	PANCHING WL	※	1
	2-4	87-038-039	WIRE BINDER		1
	2-5	★81-532-023	SLIDE BUTTON	※	1
	2-6	★81-532-609	HEAT SINK	※	1
	2-7	81-532-020	POINTER, TUNING	※	1
	2-8	★81-532-207	DIAL PAIL	※	1
	2-9	87-071-019	ROLLER ø7		5
	2-10	★81-532-214	SHAFT, TUNING	※	1
	2-11	81-532-222	DIAL DRUM	※	1
	2-12	87-096-097	DIAL STRING 0.2		1
	2-13	82-595-242	E-SPRING, DIAL		1
	2-14	81-511-203	JOINT DRUM		1
	2-15	81-532-651	SPEAKER EARTH	※	2
	2-16	81-532-607	SHIELD PLATE	※	1
	2-17	★87-041-036	ECM		1

EXPLODED VIEW-3

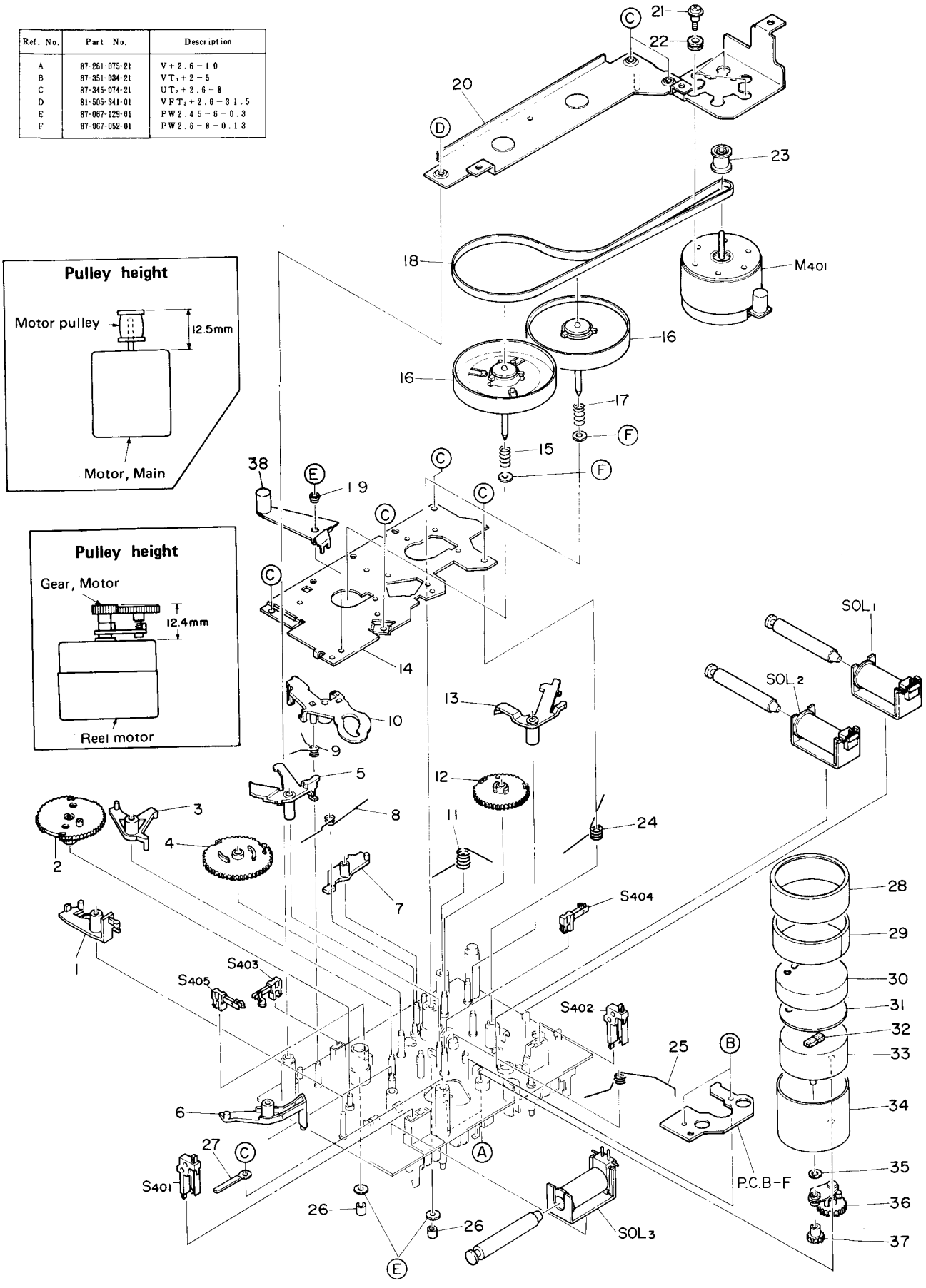
Ref. No.	Part No.	Description
A	87-081-954-01	V+1.6-3
B	87-261-036-21	V+2-8
C	87-081-501-01	VTT+2.6-4
D	87-261-075-21	V+2.6-10
E	87-341-035-21	UT_1+2-6
F	87-353-037-21	VT_2+2-10
G	87-081-808-01	PW1.7-3.5-0.25
H	87-067-105-01	PW3.4-8-0.5
I	87-441-003-01	STE1.5



Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	3-1	★86-510-220	OUTSERT CHASSIS Ass'y		1	
	3-2	81-505-344	IDLER LEVER Ass'y 2		2	
	3-3	81-506-311	C-SPRING		2	
	3-4	81-506-222	T-SPRING. PINCH FG		1	
	3-5	86-510-238	PINCH LEVER FG P Ass'y		1	
	3-6	81-505-239	EJECT LEVER		1	
	3-7	81-505-273	T-SPRING. LID LOCK		1	
	3-8	81-506-220	T-SPRING. IDLER LEVER R		1	
	3-9	81-505-241	REC BLOCKING LEVER		2	
	3-10	★81-505-244	P-SPRING. CASSETTE HOLDER		1	
	3-11	★81-506-303	T-SPRING. SLIDE BRAKE		1	
	3-12	★86-510-225	HOLDER. SWITCH		1	
	3-13	★87-073-005	STEEL BALL 2		2	
	3-14	★86-510-224	EJECT BLOCKING PLATE		1	
	3-15	81-505-274	C-SPRING. SUPPLY REEL PLATFORM		1	
	3-16	86-510-205	SUPPLY REEL PLATFORM P Ass'y		1	
	3-17	81-506-227	C-SPRING. TAKE-UP REEL PLATFORM		1	
	3-18	86-510-204	TAKE-UP REEL PLATFORM P Ass'y		1	
	3-19	★81-506-208	HEAD HOUSING Ass'y		1	
	3-20	81-506-321	SHEET		1	
	3-21	81-506-230	ADJUST SCREW. AZIMUTH		2	
	3-22	81-506-293	C-SPRING. AZIMUTH		2	
	3-23	★81-510-234	HOLDER. AZIMUTH		1	
	3-24	★81-510-237	HEAD BASE P Ass'y		1	
	3-25	81-506-237	GEAR. HEAD HOUSING		1	
	3-26	81-506-219	GEAR. SEGMENT		1	
	3-27	81-506-224	T-SPRING. GEAR SEGMENT		1	
	3-28	★81-507-224	P-SPRING. ACTUATING CHASSIS		1	
	3-29	★81-506-238	ACTUATING CHASSIS		1	
	3-30	★81-505-265	E-SPRING. ACTUATING CHASSIS		1	
	3-31	81-505-266	E-SPRING. PAUSE PLATE		1	
	3-32	★81-506-301	PLATE. PAUSE		1	
	3-33	★81-506-281	PLATE. PINCH LEVER R		1	
	3-34	★81-506-203	SELECT LEVER. PINCH ROLLER		1	
	3-35	81-505-270	T-SPRING. IDLER LEVER		1	
	3-36	★86-510-239	PINCH LEVER RG P Ass'y		1	
	3-37	81-506-223	T-SPRING. PINCH RG		1	
	3-38	81-506-305	T-SPRING. EARTH		1	
	3-39	★86-510-218	SLIDE BLAKE LEVER P		1	
	3-40	★81-505-237	FELT. SLIDE BLAKE		2	
	3-41	★81-506-215	SELECT SLIDE LEVER. HEAD		1	

EXPLODED VIEW-4

Ref. No.	Part No.	Description
A	87-261-075-21	V+2.6-10
B	87-351-034-21	VT_1+2-5
C	87-345-074-21	UT_2+2.6-8
D	81-505-341-01	VFT_2+2.6-31.5
E	87-067-129-01	PW2.45-6-0.3
F	87-067-052-01	PW2.6-8-0.13



Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	4-1	81-506-218	TRIGGER LEVER, REVERSE		1
	4-2	81-506-217	GEAR, REVERSE		1
	4-3	81-505-230	LEVER, PLAY		1
	4-4	81-505-234	GEAR, PLAY CAM		1
	4-5	81-505-231	TRIGGER LEVER, PLAY		1
	4-6	81-506-216	LEVER		1
	4-7	81-505-232	LEVER, PAUSE		1
	4-8	81-505-272	T-SPRING, CAM		1
	4-9	81-506-221	T-SPRING, REVERSE LEVER		1
	4-10	★81-506-214	LEVER, REVERSE		1
	4-11	81-505-283	T-SPRING, PAUSE LEVER		1
	4-12	81-505-235	GEAR, PAUSE CAM		1
	4-13	81-505-233	TRIGGER LEVER, PAUSE		1
	4-14	★81-505-204	MECHANISM CHASSIS B		1
	4-15	86-510-228	C-SPRING, FLYWHEEL F		1
	4-16	86-510-201	FLYWHEEL P Ass'y		2
	4-17	86-510-229	C-SPRING, FLYWHEEL R		1
	4-18	86-510-262	RUBBER BELT		1
	4-19	★86-510-253	COLLAR BALANCE		1
	4-20	★86-510-222	MOTOR HOLDER P Ass'y		1
	4-21	87-081-483	MOTOR SCREW, M2.6		3
	4-22	★87-087-029	RUBBER CUSHION		3
	4-23	86-510-242	MOTOR PULLEY		1
	4-24	86-510-230	T-SPRING, TRIGGER LEVER P		1
	4-25	81-505-269	T-SPRING, PINCH PLATE		1
	4-26	81-505-246	RUBBER, DRIVE		2
	4-27	★87-038-039	WIRE BINDER		1
	4-28～37	09-011-049	REEL MOTOR Ass'y		1
	4-28	★81-512-678	TUBE, REEL MOTOR		1
	4-29	★81-512-619	SHIELD PLATE		1
	4-30	★81-512-699	SHIELD CASE B		1
	4-31	★81-512-622	SHEET FIBRE		1
	4-32	★81-505-337	G CUSHION 10－10－1.5		1
	4-33	★87-045-210	REEL MOTOR		1
	4-34	★81-512-698	SHIELD CASE A		1
	4-35	★87-081-939	W2.2－8－0.25		1
	4-36	★86-510-207	LEVER FR Ass'y		1
	4-37	★86-510-212	GEAR, MOTOR		1
	4-38	★86-510-251	BALANCE LEVER Ass'y		1

■ACCESSORIES/PACKAGE LIST

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	1	81-532-905	INSTRUCTIONS BOOKLET (SHS, SHR, SHB, SHJS, SHJR, SHJB, MCS, MCR, MCB, MUS, MUB, SGS, SGB, SFJS only)	※	1	
	2	81-532-908	INSTRUCTIONS BOOKLET (LES, LER, LEB, LKS, LKB, LZS, LZR, LZB only)	※	1	
	3	★87-049-137	SIEMENS PLUG (SHS, SHR, SHB, SHJS, SHJR, SHJB, SFJS only)		1	
	4	★86-481-801	AC ADAPTOR AC903H (SHS, SHR, SHB, SHJS, SHJR, SHJB, SFJS only)		1	
	5	★86-481-803	AC ADAPTOR AC903E (LES, LER, LEB, LZS, LZR, LZB only)		1	
	6	★86-481-804	AC ADAPTOR AC903K (LKS, LKB only)		1	

AIWA Co., Ltd. Tokyo Japan

Printed in Japan